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Removal of oil products and phenol from waste water by composite sorbents under dynamic conditons

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Abstract

Sorption removal of petroleum products and organic pollutants is one of the most efficient methods of cleaning waste water. A high degree of removal with easy regeneration of the sorbent is achieved when porous fluoroplastic is used as the sorbent. In this study, we obtained composite sorbents from porous fluoroplastic and studied their filtration properties with respect to hydrocarbons and phenol in waste water. These sorbents possess a higher phenol-sorption capacity until break-through than activated carbon. The phenol-sorption capacity depends linearly on the carbon content in the composite sorbent, and the hydrocarbons are sorbed by both the carbon and fluoroplastic. An important advantage of the composite sorbents over activated carbon is that they can be repeatedly regenerated. © 2014 Springer Science, Business Media New York.

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Keywords

Activated carbon, Composite sorbent, Emulsion, Fluoroplastic, Phenol, Sorption, Waste water